

**Curriculum Vitae**  
**Ana Beardsley Christensen**

email: [ana.christensen@lamar.edu](mailto:ana.christensen@lamar.edu)

**Education:** Ph.D., Clemson University, Biological Sciences, August 1997.  
Dissertation: The hemoglobins and respiratory physiology of the burrowing ophiuroid, *Hemipholis elongata* (Say) (Echinodermata, Ophiuroidea).

M.A., College of William and Mary, Biology, December 1989.  
Thesis: Various aspects of volume regulation in two estuarine invertebrates: *Glycera dibranchiata* (Annelida) and *Modiolus demissus* (Mollusca).

B.S., College of William and Mary, December 1985. Major: biology; minor: mathematics

A.S., Richard Bland College, May 1983. Magna cum Laude.

**Teaching**

**experience:** Associate professor Lamar University 8/06-present  
Assistant professor Lamar University 8/99-7/06  
courses taught: Advanced Physiology (human based), Comparative Physiology, Cell Biology, Anatomy and Physiology I&II, Marine Invertebrate Zoology, Life in the extreme, Marine Biology, Tropical Marine Biology, Invertebrate Zoology

Teaching fellowship College of Charleston 8/97-7/99  
courses taught: Introductory Biology (nonmajors), Introduction to Molecular and Cellular Biology (majors), Evolution, Ecology and Biology of Organisms

**Research**

**experience:** Marine scientist Virginia Institute of 5/88-5/91  
Marine Science (VIMS)

project: stock identification of mid-Atlantic weakfish (*Cynoscion regalis*), bluefish (*Pomatomus saltatrix*), and summer flounder (*Paralichthys dentatus*) using mtDNA

Marine scientist VIMS 5/91-8/91

project: trawl survey of the juvenile fishes of Chesapeake Bay

## Other

**Appointments:** Visiting Scholar University of Sydney 12/08-3/09  
Sydney, Australia

projects: utilization of hemoglobin by brittle stars during  
regeneration

effects of climate change on the respiration of the brittle  
star *Ophionereis schayerii*

## Publications (peer reviewed):

**Christensen, A.B.**, and E.F. Christensen. 2011 comparison of populations of north American Ophiactid brittle stars possessing hemoglobin using intronic variation. 13<sup>th</sup> international Echinoderm Conference, C. Johnson (ed.) Echinoderms in a Changing World. (In press)

**Christensen, A.B.**, H.D. Nguyen, and M. Byrne. 2011. Thermotolerance and the effects of hypercapnia on the metabolic rate of the ophiuroid *Ophionereis schayeri*: inferences for survivorship in a changing ocean. *JEMBE* 403; 31-38.

**Christensen, A.B.**, E.F. Christensen, and D.W. Wiesrock. 2008. Population structure of North American *Ophiactis* spp. possessing hemoglobin. *Marine Biology* 154:755-763.

Bonds, B., **A.B. Christensen**, and D.K. Flaherty, 2006. Enterococci species in Gulf coast marine water samples as measured in the Environmental Protection Agency Method 1600. *Texas J. Sci.* 58:141-146.

**Christensen, A.B.** 2004. A new distribution record and notes on the biology of the brittle star *Ophiactis simplex* (Echinodermata, Ophiuroidea) in Texas. *Texas J. Sci.* 56: 175-179.

**Christensen, A.B.**, J.M. Colacino, and C. Bonaventura. 2003. Functional and Biochemical Properties of the hemoglobins of the burrowing brittle star *Hemipholis elongata* Say (Echinodermata, Ophiuroidea). *Biol. Bull.* 205:54 - 65.

**Christensen, A.B.**, and J.M. Colacino. 2000. Respiration in the Burrowing Brittlestar, *Hemipholis elongata* Say (Echinodermata, Ophiuroidea): A study of the effects of environmental variables on oxygen uptake. *Comp. Biochem. Physiol. A.* 127:201-213.

**Beardsley, A.M.**, and J.M. Colacino. 1998. System-wide oxygen transport by the water vascular system of the burrowing ophiuroid, *Hemipholis elongata* (Say). pp. 323-328. *Echinoderms: San Francisco. Proceedings of the 9th International Echinoderm Conference*, R. Mooi and M. Telford (eds). A. Balkema, Rotterdam.

Graves, J.E., J.R. McDowell, **A.M. Beardsley**, and D.R. Scoles. 1992. Stock structure of the bluefish *Pomatomus saltatrix* along the mid-Atlantic coast. *Fish. Bull.*, 90: 703-710

**Published Abstracts (peer reviewed):**

**Christensen, A.B.** and E.F. Christensen. 2008. Sequence variation in the hemoglobin gene of *Ophiactis* spp. Gulf of Mexico Science 26: 46.

**Christensen, A.B.** and E.F. Christensen 2008. Nucleic acid and amino acid sequence of hemoglobin from the brittle star *Ophiactis simplex* (Echinodermata, Ophiuroidea), 111<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 64.

Dark, M., **A.B. Christensen**, and E.F. Christensen. 2007. Comparison of nucleotide sequences of hemoglobin proteins from two closely related species of brittle star. 110<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 55.

**Christensen, A.B.**, E.F. Christensen, and M.V. Sukhodolets, 2007. The nucleic acid and amino acid sequences of the hemoglobins of the brittle star *Hemipholis elongata* Say. 110<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 49.

**Christensen, A.B.**, E.F. Christensen, and M.V. Sukhodolets. 2006. The nucleic acid and amino acid sequences of the fraction 1 hemoglobin of the brittle star *Hemipholis elongata* Say. Proceedings of the 12th International Echinoderm conference. In press.

Baldwin, T., **A.B. Christensen**, J. Talley, and D.K. Flaherty. 2005. A two year longitudinal study of marine enterococci density in coastal waters of Jefferson County, Texas. 108<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 57.

Bonds, B., **A.B. Christensen**, and D.K. Flaherty. 2005. Enterococci species in gulf coast marine water samples as measured in the Environmental Protection Agency Method 1600. 108<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 57.

**Christensen, A.B.**, and E.F. Christensen. 2004. Molecular comparison of a Texas population of ophiactid brittle star with *Ophiactis simplex* and *Ophiactis rubropoda*. *Echinoderms: Munich. Proceedings of the 11<sup>th</sup> International Echinoderm Conference*, T. Heinzeller and J.H. Nebelsick (eds.). pg. 574.

**Christensen, A.B.**, and E.F. Christensen. 2004. Identification of a Texas ophiactid brittle star using molecular techniques. 107<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 62.

Riker, A. and **A.B. Christensen**, 2003. Analysis of population structure of an ophiactid brittlestar (Echinodermata, Ophiuroidea) using RAPDS. 106th Texas Academy of Sciences, Program and Abstracts, pg. 62.

Dean, D.K., and **A.B. Christensen**. 2003. Population structure and tube foot contraction behavior of a small ophiactid brittle star (Echinodermata, Ophiuroidea). 106th Texas Academy of Sciences, Programs and Abstracts, pg. 63.

**Christensen, A.B.** 2001. Why do small brittlestars have hemoglobin? *Gulf of Mexico Sci.* vol. 19.

Bean, K., and **A.B. Christensen**. 2001. The effects of size and temperature on oxygen uptake of the Pygmy sunfish, *Elassoma zonatum*. 104<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 37.

George, E., P. Brown, K. Chaudry, and **A.B. Christensen**. 2001. The effect of creatine supplementation on the kidneys of mice. 104<sup>th</sup> Texas Academy of Science, Program and Abstracts, pg. 38.

**Christensen, A.B.** 1998. The properties of the hemoglobins of *Ophiactis simplex* (Echinodermata, Ophiuroidea). *Am. Zool.*, 38: 120A.

**Christensen, A.B.** 1998. The effects of declining PO<sub>2</sub> and hypercapnia on the oxygen consumption rate of *Hemipholis elongata* (Echinodermata, Ophiuroidea). *Gulf of Mexico Sci.* vol. 16.

**Beardsley, A.M.**, J.M. Colacino, and J. Gelin, 1996. *In situ* respiration rates and behavioral responses to declining PO<sub>2</sub> of the burrowing ophiuroid, *Hemipholis elongata*. *Am. Zool.*, 35: 37A.

**Beardsley, A.M.**, and J.M. Colacino, 1994. Red blood cell circulation and oxygen transport in *Hemipholis elongata* (Ophiuroidea, Echinodermata). *Am. Zool.*, 34: 35A.

**Beardsley, A.M.**, J.M. Colacino, R. Cashon, and C.J. Bonaventura, 1993. The hemoglobins of the brittlestar, *Hemipholis elongata* (Say) (Ophiuroidea, Echinodermata). Biochemical and ligand binding properties. *Am. Zool.*, 33: 43A.

### **Presentations:**

#### International

13<sup>th</sup> International Echinoderm Conference, Hobart, Tasmania, Australia 2009  
Oral presentation: Comparisons of different populations of North American Ophiactid brittle stars possessing hemoglobin using intronic variation within the hemoglobin genes. A.B. Christensen and E.F. Christensen.

6<sup>th</sup> North American Echinoderm Conference, Melbourne, FL USA 2008  
Poster presentation: Sequence variation in the hemoglobin gene of *Ophiactis* spp. A.B. Christensen and E.F. Christensen.

Society for Integrative and Comparative Biology, San Antonio, TX US 2008

Oral presentation: The nucleic acid sequence and gene structure of the hemoglobins of the brittle star *Hemipholis elongata* Say. A.B. Christensen, E.F. Christensen, and M.V. Sukhodolets.

12<sup>th</sup> International Echinoderm Conference, Durham, NH USA 2006  
Oral presentation: The nucleic acid and amino acid sequences of the fraction 1 hemoglobin of the brittle star *Hemipholis elongata* Say. A.B. Christensen, E.F. Christensen, and M.V. Sukhodolets.

11<sup>th</sup> International Echinoderm Conference, Munich, Germany 2003  
Oral presentation: Molecular comparison of a Texas population of ophiactid brittle star with *Ophiactis simplex* and *Ophiactis rubropoda*. A.B. Christensen and E.F. Christensen

Society for Integrative and Comparative Biology, Toronto, Canada 2003  
Poster: Population structure of a small fissiparous brittle star possessing hemoglobin. A.B. Christensen and D.K. Dean.

5<sup>th</sup> North American Echinoderm Conference, Walpole, ME 2001  
Oral presentation: Why do small brittle stars have hemoglobin?

Society for Integrative and Comparative Biology, Denver, CO 1999  
Poster: Properties of the hemoglobin of *Ophiactis simplex* (Ophiuroidea: Echinodermata)

4<sup>th</sup> North American Echinoderm Conference, Wallops Island, VA 1998  
Oral presentation: The effects of declining PO<sub>2</sub> and hypercapnia on the oxygen consumption rate of *Hemipholis elongata* (Echinodermata, Ophiuroidea).

Society for Integrative and Comparative Biology, Albuquerque, NM 1996  
Poster: *In situ* respiration rates and behavioral responses to declining PO<sub>2</sub> of the burrowing ophiuroid, *Hemipholis elongata*.

9<sup>th</sup> International Echinoderm Conference, San Francisco, CA 1996  
Oral presentation: System-wide oxygen transport by the water vascular system of the burrowing ophiuroid, *Hemipholis elongata* (Say).

#### National

American Society of Zoologists, St. Louis, MO 1994  
Poster: Red blood cell circulation and oxygen transport in *Hemipholis elongata* (Ophiuroidea, Echinodermata).

American Society of Zoologists, Los Angeles, CA 1993  
Poster: The hemoglobins of the brittle star, *Hemipholis elongata* (Say) (Ophiuroidea, Echinodermata). Biochemical and ligand binding properties.

### Regional

Regional meeting of the Division of Comparative Biochemistry and Physiology, American Society of Zoologists, Charleston, SC 1995  
Oral presentation: Evidence for system-wide circulation in the water vascular system of the echinoderm, *Hemipholis elongata*.

Association of Southern Biologists, Knoxville, TN 1995  
Oral presentation: Red blood cell circulation and oxygen transport in *Hemipholis elongata* (Ophiuroidea, Echinodermata).

### State

Texas Academy of Science, Corpus Christi, TX 2008  
Poster presentation: Nucleic acid and amino acid sequence of hemoglobin from the brittle star *Ophiactis simplex* (Echinodermata, Ophiuroidea). A.B. Christensen and E.F. Christensen.

Texas Academy of Science, Waco, TX 2007  
Oral presentation: The nucleic acid and amino acid sequences of the hemoglobins of the brittle star *Hemipholis elongata* Say. A.B. Christensen, E.F. Christensen, and M.V. Sukhodolets.

Poster: Comparison of nucleotide sequences of hemoglobin proteins from two closely related species of brittle star. M. Dark, E.F. Christensen, and A.B. Christensen.

Texas Academy of Science, Edinburg, TX 2005  
Poster: A two year longitudinal study of marine enterococci density in coastal waters of Jefferson County, Texas. Baldwin, T., A.B. Christensen, J. Talley, and D.K. Flaherty.

Poster: Enterococci species in gulf coast marine water samples as measured in the Environmental Protection Agency Method 1600. Bonds, B., A.B. Christensen, and D.K. Flaherty.

Texas Academy of Science, Kerrville, TX 2004  
Oral presentation: Identification of a Texas ophiactid brittle star using molecular techniques. A.B. Christensen and E.F. Christensen.

Texas Academy of Science, Nacogdoches, TX 2003  
Oral presentation: Why do small brittle stars have hemoglobin? A.B. Christensen

Poster: Analysis of population structure of an ophiactid brittle star using RAPDs. A. Riker and A.B. Christensen

Poster: Population structure and tube foot behavior of a small ophiactid brittle star (Echinodermata, Ophiuroidea). D.K. Dean and A.B. Christensen.

Texas Academy of Sciences, San Marcos, TX 2000

Poster: The effects of size and temperature on oxygen uptake of the Pygmy sunfish, *Elassoma zonatum*. K. Bean and A.B. Christensen.

Poster: The effect of creatine supplementation on the kidneys of mice. E. George, P. Brown, K. Chaudry, and A.B. Christensen.

**Invited presentations:**

Hummingbirds: Taking it to the limit  
Given to the Friends of Village Creek State Park 6/01  
Biology of Owls  
Given to Friends of Village Creek State Park 9/02  
And Wildwood Birdwatching Society 10/02

**Grants:**

BeachWatch 2010-2011, Texas General Land Office/EPA  
Research Enhancement Grant 2010-2011, Lamar University  
BeachWatch 2009-10, Texas General Land Office/EPA  
BeachWatch 2008-09, Texas General Land Office/EPA  
Development leave grant 2008-09, Lamar University  
BeachWatch 2007-08, Texas General Land Office/EPA  
BeachWatch 2006-07, Texas General Land Office/EPA  
BeachWatch 2005-06, Texas General Land Office/ EPA  
Research enhancement grant 2005-2006, Lamar University  
BeachWatch 2004-05, Texas General Land Office/EPA  
BeachWatch 2003-04, Texas General Land Office/EPA  
Research enhancement grant 2002-03, Lamar University  
BeachWatch 2002-03, Texas General Land Office  
BeachWatch 2001-02, Texas General Land Office  
Research enhancement grant 2000-01, Lamar University  
Departmental Research Grant 1998-99, College of Charleston  
Sigma Xi Grant-in-Aid of Research 1994  
Lerner Gray Fund for Marine Research 1994  
Slocum-Lunz Foundation 1994

**Awards:**

Rising Star Recipient 2005  
Clemson University, Clemson, SC  
  
Outstanding Adjunct Teacher 1999  
College of Charleston, Charleston, SC

**Student research**

**Undergraduate**

Phillip Brown Effects of creatine supplementation on the kidneys of mice

Kasim Chaudry Effects of creatine supplementation on the kidneys of mice  
Elizabeth George Effects of creatine supplementation on the kidneys of mice  
Christel Burton Effects of temperature on the respiration rate of *Ophiactis simplex* (CA population)  
Austin Montondon Histological sectioning of *O. simplex*  
William Grace Survey of fish from Village Creek State Park  
Kenneth Bean Effects of size and temperature on oxygen consumption rate of pygmy sunfish, *Elassoma zonatum*  
Denise Dean Population structure of *Ophiactis simplex*  
Tube foot contraction rates in *O. simplex*  
Anetra Hall Effects of temperature on the respiration rate of *O. simplex* (TX population)  
Sheila Moore Effects of hypoxia on hemoglobin production in *O. simplex*  
LeeAnn Merrill Oxygen consumption of the guppy *Poecilia reticulata*  
Peter O'Donald Effects of pH on oxygen binding equilibria of hemoglobin from various species of fish  
Effects of season, oxygen, and salinity on the hemoglobins of the spotted gar  
Lindsey Cauthen Identification and cataloging of the DeLeon shell collection  
Lori Blanton Karyotyping of *O. simplex*  
Effects of temperature on the respiration rate of *O. simplex* (TX population)  
Sequencing a portion of the mitochondrial cytochrome c oxidase I (COI) gene for several species of brittle star  
John Montalbano Phylogenetic relationship between the brittle star families Ophiactidae and Amphiuroidae  
Miriam Dark Nucleotide sequence of the hemoglobin gene of the brittle star *Ophiactis simplex*  
Lisa Stegall Effects of pH/hypercapnia on the respiration and regeneration rates of the brittle star *Hemipholis elongata*  
Bonnie Smith Effects of pH/hypercapnia on the respiration and regeneration rates of the brittle star *Hemipholis elongata*  
Michael Zarzosa Probing the genomes of the brittle stars for the presence of hemoglobin genes using PCR  
Assessing the incidence of parasitic infection in the canine population of Ambergris Caye, Belize, and its possible transfer to human populations  
Jason Fondrick Isolation and detection of HSP70 in Amphiuroid brittle stars

#### **McNair Scholar Research**

Malkishuana (Tj) Lacy Respiratory responses of the fliers, *Centrarchus macropterus*, in extreme habitats

#### **Undergraduate Honors Theses**

Natascha Leidensdorf Deaths due to myocardial infarction related to time of death  
Lindsey Cauthen Efficacy of zoledronic acid against neuroblastoma in the bone:



an *in vitro* and *in vivo* analysis

### **Graduate Student Research**

- Becky Wolf            Effects of season on the hemoglobins of bluegill sunfish from various habitats (project terminated prior to completion)
- Amy Riker             Identification of a small Texas ophiactid brittle star using RAPDs
- Kristina Radevojevich-Cross    The effects of climate change on the respiration and regeneration rates of two species of infaunal brittle stars, *Hemipholis elongata* and *Amphipholis gracillima* (Echinodermata, Ophiuroidea)
- Jonathan Esclovon    Effects of increased temperature on the biology of five species of tropical brittle stars

### **Committee/**

- Other Duties:**    Core Curriculum Governance Committee 2011-12  
Selection Committee, Judge Joe Fisher lecture Series 2011-12  
Chair, College of Arts and Sciences Merit and University Scholar nomination Committee 2010-11  
Mirabeau Scholar Selection Committee 2008, 2010  
Departmental curriculum committee 2007-08  
Chair, post tenure review committee 2006  
University Awards Committee 2000, 2001, 2010  
Pre-professional Advisory Committee 1999- present  
Search Committees:  
    Marine Biology/ornithology 2002, 2006  
    Microbiologist 2001, 2006  
    Parasitologist, Botanist 2000  
    Biochemist 2000-2003  
Director, BeachWatch for Jefferson County, TX 2001-present  
Faculty Advisor for DOXs (Pre-professional students) and American Medical Student Association (AMSA) 1999 – present  
Faculty Advisor for Pre-pharmacy Interscholastic League of Students (PILS) 2004-2007  
Faculty Advisor for Minority Health and Medical Student Association 2006-2008  
President of Lamar Chapter of Sigma Xi 2001-05  
Vice-president of Lamar Chapter of Sigma Xi 2000-2001  
Pre-professional Webmaster 2003-2006  
Biology Department Webmaster 2000 - present  
Mentor for the McNair Scholar program 1 year  
Advisor for Honors Program Student Theses 2 years  
Local Host Committee, 109<sup>th</sup> Texas Academy of Science Meeting 2003-2006  
Vice Chair, Biology Section, Texas Academy of Science 2004-2006  
Chair, Cell and Molecular Biology Section, Texas Academy of Science

2006-2007

Academic Director, Texas Academy of Science 2009-present

**Professional  
Affiliations:**

Society of Integrative and Comparative Biology (SICB)  
(formerly American Society of Zoologists)  
Sigma Xi, The Scientific Research Society  
Texas Academy of Science